
INSTRUCTION MANUAL

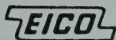
EICO

667

DYNAMIC CONDUCTANCE
TUBE & TRANSISTOR TESTER



283 Malta Street, Brooklyn, N. Y. 11207

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667 TUBE TESTER

At the 1 position for either transistor type, the meter is inserted in the collector circuit in series with a 1K current-limiting resistor to measure the current (I_{ce0}) under these conditions. At either 2 position, a 200K resistor is connected between the collector side of the power supply and the base to put a small current into the base. The current gain, Beta, is then read on the meter; which remains in the collector circuit.

WARNING: Be certain as to the type of transistor (n-p-n or p-n-p) you are testing. Testing a transistor using the positions designated for the opposite type may damage the tester meter or the transistor. Note that shorted transistors may cause the meter to read past full scale at the "N-P-N 1" or "P-N-P 1". Should this occur, turn the switch back to the "TUBE" position immediately and discard the defective transistor, after you have first checked to see that the correct test position was used for the particular type.

SPECIAL SOCKET CONNECTIONS — Several socket terminal connections are not standard and should be noted. The pilot light socket in the center of the NOVAR socket is connected across the selected filament voltage (shell to ground, center post to filament switch arm). The center of the loctal socket is connected to ground. The sub-miniature in-line socket has no numbers assigned to its seven terminals. In the Model 667, these terminals are connected to the push-switches as if they were numbered 1 to 7 beginning at the index dot on the panel. However, a consistent connection procedure has been established (the roll chart settings are given accordingly), which is as follows: With tube base and socket indexes matched (dot or spur on tube base to dot at right of socket on the panel), the tube leads are inserted in order so as not to skip any socket terminals starting from the extreme right.

OPERATING INSTRUCTIONS

PRELIMINARY STEPS FOR TUBE OR TRANSISTOR TESTING

1. Insert the power plug in a 105-130 volts AC, 60 cps line outlet. Do not use a DC line outlet or any AC line outlet other than specified above.
2. Turn the tester on by rotating the LINE ADJ. control clockwise from AC-OFF.
3. Set the TRANSISTOR TEST selector to TUBE, regardless of whether it is a tube or transistor that is to be tested.
4. Make a preliminary line adjust by holding down the LINE button while turning the LINE ADJ. control until the meter pointer is over the LINE ADJ. mark on the meter (center scale). Release the LINE button at the conclusion of the adjustment.

TUBE TESTING CONTINUED

5. Press the RESET button to release any button which may be down from a previous setting. Make sure the TRANSISTOR TEST selector is set at "TUBE".
6. Move all 15 lever switches down to the "1" position.
7. Rotate one or both roll chart wheels until the tube type you wish to test appears in one of the windows. Obsolete types will be found in a supplement to this manual.

On cathode leakage test of light duty diodes in multi-section tubes, meter will not swing across the scale as for other type of tubes if tube under test is good, and there is no need to depress the H-K LEAK button. Underlining of pin No. 2 in case of 6AQ7 merely indicates cathode. The above also applies to other tubes of similar types such as 6R8, 6S8, and 6T8.

Standard for acceptance or rejection on Inter-Element Leakage (excluding cathode-heater leakage): No less than 5 megs on any test. A stricter standard for high reliability applications would be no less than 10 megs on any test.

Standard for Acceptance or Rejection on Cathode-Heater Leakage: Not less than 1 meg for non-power types; not less than 500K for power types. Half these values may be acceptable for tubes approaching end of life, with the exception of tubes used in audio preamplifiers which may not read less than 1 meg at any time.

In general, tubes failing to meet these standards should be discarded. In any case, do not perform a MERIT test on any tube having an inter-element leakage resistance less than 100K ohms, as this may damage the tube tester. Note that all required inter-element and cathode-heater leakage tests for the entire tube have been completed with the tester set up for the first (or only) MERIT test and before the first (or only) MERIT test is made. No further leakage testing is performed thereafter.

Note: Depressing the buttons listed in the MERIT column actually tests that element for leakage until the MERIT lever is depressed. A tube giving too low an ohms reading in this condition should not be tested for MERIT.

16. Perform the first (or only) MERIT test on tubes which have been found satisfactory as to leakage and shorts by first pressing down the button listed in the MERIT column and then pulling down the MERIT lever switch. With the MERIT lever held down, read the merit (quality) indication on the DIODES GOOD scale for diodes and rectifiers, or the colored areas and percent markings for all other tubes. Note that although 100% represents normal conductance for a new tube, some tubes will read higher and some lower because of the tolerances allowed in tube manufacturing. Note also that the limits of the GOOD, ? (doubtful), and REPLACE areas are obtained by striking an average for all tube types and so should not be interpreted in an absolute manner.

17. If there is more than one line of settings for the tube, leave the tube in the socket and proceed as follows for each line: a) Reset the lever switches and GRID and PLATE controls accordingly; b) Depress the button listed in the MERIT column; c) Pull down the MERIT lever switch to read the quality on the meter of the particular tube section under test.

18. After testing the last section of a tube, remove the tube from the socket of the tube tester. Push reset button and return all lever switches to "1". Failure to do this can result in damage to the meter when you proceed to test the next tube.

19. Proceed with testing another tube by beginning with Step 5. If there are no more tubes or transistors to be tested, turn the LINE ADJ. control counter-clockwise to its AC-OFF position. A slide switch at the end of the potentiometer winding opens the primary circuit of the power transformer and turns the tester off. If there is a transistor to be tested, proceed directly to step 5 of TRANSISTOR TESTING after completing step 18 of TUBE TESTING.

